

**ABSTRACT OF THE DISCLOSURE**

A flow control system for controlling a variable displacement pump including a metering valve in fluid communication with the pump for metering an output of the pump. A regulating valve receives a portion of the output of the pump as a bypass flow at a first pressure, wherein an output of the regulating valve is at an interim pressure. The interim pressure is substantially equal to an average of the first pressure and a low reference pressure. An actuator sets a displacement of the pump by acting on a piston connected to a cam ring of the pump. The actuator receives the interim pressure and, thereby, the output of the variable displacement pump is determined.